AMENDMENTS TO THE CLAIMS

Please amend claims 21, 26, 27, 49, 58, 72, 76, 89, 93 and 94, such that the status of pending claims 14-98 is as follows:

1-13. (Canceled)

14. (Previously Presented) A method for transmitting and receiving at least two independent source signals, comprising the steps of:

obtaining said at least two independent source signals, in the form of independent series of coded bits;

assigning a determined frequency band to an OFDM signal to be transmitted, several approximately orthogonal carrier frequencies being defined in said frequency band;

breaking down said frequency band into at least two frequency subbands, each of said subbands comprising a set of said approximately orthogonal carrier frequencies;

assigning each of said frequency subbands to one of said independent source signals;

selectively modulating the carrier frequencies of each frequency subband with the coded bits of the corresponding source signal;

grouping said modulated frequency subbands to form a modulated OFDM signal;

tuning and transmitting the modulated OFDM signal as a whole;

receiving the modulated OFDM signal in a receiver;

extracting from the modulated OFDM signal at least one~~, but not all~~ of the frequency subbands, by filtering; and

performing demodulation processing solely on the frequency carriers contained in the extracted subbands of the modulated OFDM signal.

15. (Previously Presented) Method according to claim 14, characterized in that said subbands are adjacent.

16. (Previously Presented) Method according to claim 14, characterized in that said subband grouping step is preceded by an independent coding step and frequency and time interlacing of each of said source signals, so as to obtain a set of coded signals designed to modulate each of said carrier frequencies of the subband assigned to said source signal.

17. (Previously Presented) Method according to claim 14, wherein the modulated OFDM signal is a single signal tuned as a whole by a sole modulator modulating simultaneously the substantially orthogonal frequency carriers, the orthogonal frequency carriers being orthogonal in each subband and from subband to subband.

18. (Previously Presented) Method according to claim 14, characterized in that said subbands have identical bandwidths.

19. (Previously Presented) Method according to claim 14, characterized in that said source signals are assigned to said subbands in a manner that varies with time, in order to maximize the frequency diversity.

20. (Previously Presented) Method according to claim 19, characterized in that said assignment is modified on each transmission of a frame of said signal.

21. (Currently Amended) Method according to claim 14, characterized in that at least a first of said source signals corresponds to basic information for a program and at least a second of said source signals corresponds to information complementary to said basic information, in order to define at least two receiver quality levels:

- a first quality level applicable to receivers capable of processing only the subband corresponding to said first ~~sourse~~ source signals; and
- a second quality level corresponding to receivers capable of processing subbands corresponding to the first and second source signals.

22. (Previously Presented) Method according to claim 14, characterized in that performing demodulation processing further comprises:

selecting a given program corresponding to at least one of the frequency subbands using a selection means; and

acting on the carrier frequencies contained in the at least one selected subband using a mathematical transformation means.

23. (Previously Presented) Method according to claim 22, characterized in that said selection means includes analog transposition means including a first RF transposition oscillator and a second IF transposition oscillator, and means of controlling an oscillation frequency of said first RF transposition oscillator as a function of the at least one selected subband, so that the at least one selected subband is centered on a predetermined frequency.

24. (Previously Presented) Method according to claim 22, characterized in that said selection means comprises:

first analog transposition means and second digital transposition means that are variable as a function of the at least one selected subband; and

a subsampling means.

25. (Previously Presented) Method according to claim 22, characterized in that said mathematical transformation means acts on a number of carrier frequencies slightly exceeding the number of carrier frequencies contained in the at least one extracted subband, so as to compensate for imperfection due to extraction filtering of the at least one extracted subband.

26. (Currently Amended) A method for transmitting and receiving an OFDM signal, the method comprising:

obtaining at least two independent source signals, each source signal being in the form of an independent series of coded bits;

assigning a determined frequency band on which the OFDM signal will be transmitted;

defining approximately orthogonal carrier frequencies in the determined frequency band;

breaking the determined frequency band down into at least two frequency subbands, each of said subbands comprising a set of said approximately orthogonal carrier frequencies;

assigning each ~~independant~~ independent source signal to one of said frequency subbands;

transmitting a modulated OFDM signal by selectively modulating the carrier frequencies of each frequency subband with the coded bits of the correspondingly assigned source signal and grouping said modulated OFDM signal being tuned and transmitted as a whole, so that said frequency carriers are orthogonal in each of said subbands and from subband to subband;

receiving the modulated OFDM signal;

extracting at least one of the frequency subbands from the received OFDM signal by filtering; and

performing demodulation processing solely on the frequency carriers contained in the at least one extracted subband of the received modulated OFDM signal.

27. (Currently Amended) A receiver of at least ~~one~~ two independent source ~~signal~~ signals, said independent source signals being transmitted according to the steps of:

obtaining said at least two independent source signals, in the form of independent series of coded bits;

assigning a determined frequency band to an OFDM signal to be transmitted, several approximately orthogonal carrier frequencies being defined in said frequency band;

breaking down said frequency band into at least two frequency subbands, each of said subbands comprising a set of said approximately orthogonal carrier frequencies;

assigning each of said frequency subbands to one of said independent source signals;

selectively modulating the carrier frequencies of each frequency subband with the coded bits of the corresponding source signal;

grouping said modulated frequency subbands to form a modulated OFDM signal;

tuning and transmitting the modulated OFDM signal as a whole;

said receiver comprising:

- a signal receiver of the modulated OFDM signal;
- an extractor for extracting at least one frequency subband, by filtering from the modulated OFDM signal;
- and a demodulation processor acting solely on the frequency carriers contained in the at least one extracted subband of the modulated OFDM signal.

28. (Previously Presented) Receiver according to claim 27, characterized in that said extractor includes a first RF transposition oscillator and a second IF transposition oscillator, and a controller of an oscillation frequency of said first oscillator as a function of the at least one extracted subband, so that the at least one extracted subband is centered on a predetermined frequency.

29. (Previously Presented) Receiver according to claim 27, characterized in that said extractor comprises a first analog transposer and a second digital transposer that are variable as a function of the at least one extracted subband, and a subsampler.

30. (Previously Presented) Receiver according to claim 27, characterized in that said demodulation processor comprises a mathematical transformation acting on a number of carrier frequencies slightly exceeding the number of carrier frequencies contained in the at least one extracted subband, so as to compensate for the imperfection due to extraction filtering of the at least one extracted subband.

31. (Previously Presented) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that a receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that a first type of receiver can receive the whole OFDM signal and process one source signal, without processing the whole OFDM signal.

32. (Previously Presented) Signal according to claim 31, characterized in that said subbands are adjacent.

33. (Previously Presented) Signal according to claim 31, characterized in that at least two subbands have identical bandwidths.

34. (Previously Presented) Signal according to claim 31, characterized in that said source signals are assigned to said subbands in a manner that varies with time, in order to maximize the frequency diversity.

35. (Previously Presented) Signal according to claim 34, characterized in that said assignment is modified on each transmission of a frame of said signal.

36. (Previously Presented) Signal according to claim 31, characterized in that at least a first of said source signals corresponds to basic information for a program and at least a second of said source signals corresponds to information complementary to said basic information, in order to define at least two receiver quality levels:

- a first quality level applicable to receivers capable of processing only the subband corresponding to said first source signals; and
- a second quality level corresponding to receivers capable of processing subbands corresponding to the first and second source signals.

37. (Previously Presented) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each

of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that processing to be done in the receiver, compared to processing taking into account all the frequency carriers of said modulated OFDM signal, of said OFDM signal is reduced.

38. (Previously Presented) Signal according to claim 37, characterized in that said subbands are adjacent.

39. (Previously Presented) Signal according to claim 37, characterized in that at least two subbands have identical bandwidths.

40. (Previously Presented) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that it is possible to transmit several source signals without it being necessary to widen the frequency band allocated to said OFDM signal.

41. (Previously Presented) Signal according to claim 40, characterized in that said subbands are adjacent.

42. (Previously Presented) Signal according to claim 40, characterized in that at least two subbands have identical bandwidths.

43. (Previously Presented) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that at least one receiver of at least a first type of receivers can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that said OFDM signal can be received and processed by at least two types of receivers, corresponding to at least two reception qualities:

- a first type of receivers processing a first set of at least one subband; and
- a second type of receivers processing said first set of at least one subband and at least one second set of at least one subband not belonging to said first set.

44. (Previously Presented) Signal according to claim 43, characterized in that said subbands are adjacent.

45. (Previously Presented) Signal according to claim 43, characterized in that at least two subbands have identical bandwidths.

46. (Previously Presented) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that at least one subband can be coded with a coding distinct of coding applied to other subbands.

47. (Previously Presented) Signal according to claim 46, characterized in that said subbands are adjacent.

48. (Previously Presented) Signal according to claim 46, characterized in that at least two subbands have identical bandwidths.

49. (Currently Amended) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so

that a set of at least one subband can be specifically interlaced in time or in frequency or in time and frequency.

50. (Previously Presented) Signal according to claim 49, characterized in that said subbands are adjacent.

51. (Previously Presented) Signal according to claim 49, characterized in that at least two subbands have identical bandwidths.

52. (Previously Presented) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that a receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that the receiver can select a given program, among at least two programs carried by said OFDM signal.

53. (Previously Presented) Signal according to claim 52, characterized in that said subbands are adjacent.

54. (Previously Presented) Signal according to claim 52, characterized in that at least two subbands have identical bandwidths.

55. (Previously Presented) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that at least one receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that the receiver processes said OFDM signal by applying a DFT only on said extracted subbands.

56. (Previously Presented) Signal according to claim 55, characterized in that said subbands are adjacent.

57. (Previously Presented) Signal according to claim 55, characterized in that at least two subbands have identical bandwidths.

58. (Currently Amended) An OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each

of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that at least one receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the at least one extracted subband, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that the receiver processes said OFDM signal by controlling an RF transposition oscillator or an IF transposition oscillator or an RF transposition oscillator and an IF transposition oscillator as a function of the at least one extracted subband, so that the at least one extracted subband will be centered at a predetermined frequency.

59. (Previously Presented) Signal according to claim 58, characterized in that said subbands are adjacent.

60. (Previously Presented) Signal according to claim 58, characterized in that at least two subbands have identical bandwidths.

61. (Previously Presented) An transmission system wherein an OFDM signal is transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that a receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said

OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that the receiver processes said OFDM signal by varying analog/digital transposition means and digital transposition means as a function of the at least one extracted subband.

62. (Previously Presented) Signal according to claim 61, characterized in that said subbands are adjacent.

63. (Previously Presented) Signal according to claim 61, characterized in that at least two subbands have identical bandwidths.

64. (Previously Presented) A receiver of an OFDM signal comprising:

a means for receiving a whole OFDM signal; and

a means for processing at least one source signal without processing the whole OFDM signal, the OFDM signal transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that said receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole

by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband.

65. (Previously Presented) Receiver according to claim 64, characterized in that said source signals are assigned to said subbands in a manner that varies with time, in order to maximize the frequency diversity, and in that said means for processing comprises means to identify at least one subband corresponding to said at least one source signal.

66. (Previously Presented) A receiver according to claim 64, characterized in that at least a first of said source signals corresponds to basic information for a program and at least a second of said source signals corresponds to information complementary to said basic information, in order to define at least two receiver quality levels:

- a first quality level applicable to receivers capable of processing only the subband corresponding to said first source signals; and
- a second quality level corresponding to receivers capable of processing subbands corresponding to the first and second source signals;

said receiver being of said first quality level and comprising means for processing only the subband corresponding to said first source signals.

67. (Previously Presented) A receiver according to claim 64, characterized in that at least a first of said source signals corresponds to basic information for a program and at least a second of said source signals corresponds to information complementary to said basic information, in order to define at least two receiver quality levels:

- a first quality level applicable to receivers capable of processing only the subband corresponding to said first source signals; and

– a second quality level corresponding to receivers capable of processing subbands corresponding to the first and second source signals;

said receiver being of said second quality level and comprising means for processing subbands corresponding to the first and second source signals.

68. (Previously Presented) A receiver of an OFDM signal comprising:

a means for receiving a whole OFDM signal; and

a means for processing at least one source signal so that the processing to be done in the at least one receiver of the OFDM signal is reduced, the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband.

69. (Previously Presented) A receiver of an OFDM signal comprising a means for processing only a subband corresponding to a first source signal, the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source

signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that at least one receiver of at least a first type of receivers can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that said OFDM signal can be received and processed by at least two types of receivers, corresponding to at least two reception qualities:

- a first type of receivers processing a first set of at least one subband; and
- a second type of receivers processing said first set of at least one subband and at least one second set of at least one subband not belonging to said first set, said receiver being of said first quality level.

70. (Previously Presented) A receiver of an OFDM signal comprising means for processing subbands corresponding to first and second source signals, the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that at least one receiver of at least a first type of receivers can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency

carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that said OFDM signal can be received and processed by at least two types of receivers, corresponding to at least two reception qualities:

- a first type of receivers processing a first set of at least one subband; and
- a second type of receivers processing said first set of at least one subband and at least one second set of at least one subband not belonging to said first set, said receiver being of said second quality level.

71. (Previously Presented) A receiver of an OFDM signal comprising:

a means for receiving a whole OFDM signal; and

a means for decoding at least one subband coded with a coding; the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband,

so that at least one subband can be coded with a coding distinct from coding applied to other subbands.

72. (Currently Amended) A receiver of an OFDM signal comprising:

a means for receiving a whole OFDM signal; and

a means for specifically di-interlacing in time or in frequency at least one subband, the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband,

so that a set of at least one subband can be specifically interlaced in time or in frequency or in time and frquency.

73. (Previously Presented) A receiver of an OFDM signal comprising:

a means for selecting a given program, among at least two programs carried by the OFDM signal; and

a means for processing at least one subband corresponding to a given program, the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that the receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband.

74. (Previously Presented)A receiver of an OFDM signal comprising:

means for receiving said OFDM signal; and

means for applying a DFT only on an extracted subband of the OFDM signal, the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that at least one receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially

orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband.

75. (Previously Presented) A receiver of an OFDM signal for controlling an RF transposition oscillator or an IF transposition oscillator as a function of at least one extracted subband so that the RF transposition or the IF transposition will be centered at a a predetermined frequency, the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that at least one receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband.

76. (Currently Amended) A ~~reciever~~ receiver for processing an OFDM signal comprising:

analog/digital transposition means;

digital transposition means; and

means for varying the analog/digital transposition means and the digital transposition means as a function of at least one extracted subband, the OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein each of said source signals is assigned to at least a distinct one of at least two

frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that a receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands, said OFDM signal being a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband.

77. (Previously Presented) An emitter of an OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, said emitter comprising:

means for assigning each of said source signals to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that a receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands; and

means for tuning said OFDM signal as a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband, so that a receiver can receive the whole OFDM signal and process one source signal, without processing the whole OFDM signal.

78. (Previously Presented) An emitter according to claim 77, characterized in that said means for assigning assigns said source signals to said subbands in a manner that varies with time, in order to maximize the frequency diversity.

79. (Previously Presented) Emitter according to claim 78, characterized in that said assignment is modified on each transmission of a frame of said signal.

80. (Previously Presented) Emitter according to claim 77, characterized in that at least a first of said source signals corresponds to basic information for a program and at least a second of said source signals corresponds to information complementary to said basic information, in order to define at least two receiver quality levels:

- a first quality level applicable to receivers capable of processing only the subband corresponding to said first source signals; and
- a second quality level corresponding to receivers capable of processing subbands corresponding to the first and second source signals.

81. (Previously Presented) An emitter of an OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein said emitter comprises:

means for assigning each of said source signals to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers; and

means for tuning said OFDM signal as a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially

orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband,

so that the processing to be done in a receiver of said OFDM signal is reduced.

82. (Previously Presented) Emitter according to claim 81, characterized in that said subbands are adjacent.

83. (Previously Presented) Emitter according to claim 82, characterized in that at least two subbands have identical bandwidths.

84. (Previously Presented) An emitter of an OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein said emitter comprises:

means for assigning each of said source signals to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers; and

means for tuning said OFDM signal as a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband,

so that it is possible to transmit several source signals without it being necessary to widen the frequency band allocated to said OFDM signal.

85. (Previously Presented) An emitter of an OFDM signal according to claim 84, characterized in that said subbands are adjacent.

86. (Previously Presented) An emitter of an OFDM signal according to claim 85, characterized in that at least two subbands have identical bandwidths.

87. (Previously Presented) An emitter of an OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein said emitter comprises:

means for assigning each of said source signals to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that at least one receiver of at least a first type of receivers can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands; and

means for tuning said OFDM signal as a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband,

so that said OFDM signal can be received and processed by at least two types of receivers, corresponding to at least two reception qualities:

- a first type of receivers processing a first set of at least one subband;
- a second type of receivers processing said first set of at least one subband and at least one second set of at least one subband not belonging to said first set.

88. (Previously Presented) An emitter of an OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said

carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals, wherein said emitter comprises:

means for assigning each of said source signals to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers; and

means for tuning said OFDM signal as a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband,

said emitter further comprising at least two distinct coding means, so that at least one subband can be coded with a coding distinct of coding applied to other subbands.

89. (Currently Amended) An emitter of an OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein said emitter comprises:

means for assigning each of said source signals to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers; and

means for tuning said OFDM signal as a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband,

said emitter further comprising means for specifically interlacing in time or in frequency or in time and frequency a set of at least one subband.

90. (Previously Presented) An emitter of an OFDM signal to be transmitted to at least one receiver, said OFDM signal being composed of a plurality of substantially orthogonal frequency carriers, said carriers being modulated by distinct data and simultaneously transmitted to form said OFDM signal on a determined frequency band, said OFDM signal including at least two source signals,

wherein said emitter comprises:

means for assigning each of said source signals to at least a distinct one of at least two frequency subbands, each of said at least two frequency subbands comprising a set of said substantially orthogonal frequency carriers, so that a receiver can extract at least one of said subbands, but not all subbands from the transmitted OFDM signal by filtering, and can carry out demodulation processing solely on the frequency carriers contained in the extracted subbands; and

means for tuning said OFDM signal as a single signal tuned as a whole by a sole modulator modulating simultaneously said plurality of substantially orthogonal frequency carriers, said plurality of orthogonal frequency carriers being orthogonal in each subband and from subband to subband,

so that the receiver can select a given program, among at least two programs carried by said OFDM signal.

91. (Previously Presented) Method according to claim 22, characterized in that said selection means includes analog transposition means including a first RF transposition oscillator and a second IF transposition oscillator, and means of controlling an oscillation frequency of said second IF transposition oscillator as a function of the at least one subband, so that the at least one subband is centered on a predetermined frequency.

92. (Previously Presented) Receiver according to claim 27, characterized in that said extractor includes a first RF transposition oscillator and a second IF transposition oscillator, and a controller of the oscillation frequency of said second oscillator as a function of the at least one selected subband, so that at least one selected subband is centered on a predetermined frequency.

93. (Currently Amended) An OFDM signal to be used in a method ~~according to claim 14~~ for transmitting and receiving at least two independent source signals that comprises:

obtaining said at least two independent source signals, in the form of independent series of coded bits;

assigning a determined frequency band to the OFDM signal to be transmitted, several approximately orthogonal carrier frequencies being defined in said frequency band;

breaking down said frequency band into at least two frequency subbands, each of said subbands comprising a set of said approximately orthogonal carrier frequencies;

assigning each of said frequency subbands to one of said independent source signals;

selectively modulating the carrier frequencies of each frequency subband with the coded bits of the corresponding source signal;

grouping said modulated frequency subbands to form a modulated OFDM signal;

tuning and transmitting the modulated OFDM signal as a whole;

receiving the modulated OFDM signal in a receiver;

extracting from the modulated OFDM signal at least one~~, but not all~~ of the frequency subbands, by filtering; and

performing demodulation processing solely on the frequency carriers contained in the extracted subbands of the modulated OFDM signal.

94. (Currently Amended) An OFDM signal to be received in a receiver ~~according to claim 27~~ of at least ~~one~~ two independent source ~~signal~~ signals, said independent source signals being transmitted according to the steps of:

obtaining said at least two independent source signals, in the form of independent series of coded bits;

assigning a determined frequency band to the OFDM signal to be transmitted, several approximately orthogonal carrier frequencies being defined in said frequency band;

breaking down said frequency band into at least two frequency subbands, each of said subbands comprising a set of said approximately orthogonal carrier frequencies;

assigning each of said frequency subbands to one of said independent source signals;

selectively modulating the carrier frequencies of each frequency subband with the coded bits of the corresponding source signal;

grouping said modulated frequency subbands to form a modulated OFDM signal;

tuning and transmitting the modulated OFDM signal as a whole;

said receiver comprising:

- a signal receiver of the modulated OFDM signal;
- an extractor for extracting at least one frequency subband, by filtering from the modulated OFDM signal;
- and a demodulation processor acting solely on the frequency carriers contained in the at least one extracted subband of the modulated OFDM signal.

95. (Previously Presented) A method for transmitting and receiving at least two independent source signals, comprising the steps of:

obtaining the at least two independent source signals in the form of independent series of coded bits;

assignment of a determined frequency band to an OFDM signal to be transmitted, several approximately orthogonal carrier frequencies being defined in the frequency band;

breakdown of the frequency band into at least two frequency subbands, each of the subbands comprising a set of the approximately orthogonal carrier frequencies;

assignment of each of the frequency subbands to one of the independent source signals;

selectively modulating the carrier frequencies of each frequency subband with the coded bits of the corresponding source signal;

grouping the modulated frequency subbands to form a modulated OFDM signal;

tuning and transmitting the modulated OFDM signal as a whole;

receiving the modulated OFDM signal in a first type of receiver comprising the steps of:

extracting from the modulated OFDM signal at least one, but not all, the frequency subbands by filtering; and

performing demodulation processing solely on all the frequency carriers of the modulated OFDM signal; and

receiving the modulated OFDM signal in a second type of receiver comprising the step of:

performing demodulation processing in a second type receiver solely on all the frequency carriers of the modulated OFDM signal.

96. (Previously Presented) An OFDM signal produced by a signal generator comprising:

a pre-determined frequency band defining a plurality of approximately orthogonal carrier frequencies, the plurality of approximately orthogonal carrier frequencies divided into at least two frequency subbands, each frequency subband representing a set of the plurality of approximately orthogonal carrier frequencies;

independent source signals representing independent series of coded bits, each independent source signal being assigned to one of the at least two frequency subbands,

wherein each set of the plurality of approximately orthogonal carrier frequencies of each of the at least two frequency subbands is selectively modulated with coded bits of the assigned independent source signal and grouped to form the OFDM signal.

97. (Previously Presented) A method for transmitting and receiving at least two independent source signals, comprising the steps of:

obtaining said at least two independent source signals, in the form of independent series of coded bits;

assigning a determined frequency band to an OFDM signal to be transmitted, several approximately orthogonal carrier frequencies being defined in said frequency band;

breaking down said frequency band into at least two frequency subbands, each of said subbands comprising a set of said approximately orthogonal carrier frequencies;

assigning each of said frequency subbands to one of said independent source signals;

selectively modulating the carrier frequencies of each frequency subband with coded bits of the corresponding source signal;

grouping said modulated frequency subbands to form a modulated OFDM signal;

tuning and transmitting the OFDM signal as a whole;

receiving the OFDM signal by at least two types of receivers, ~~in~~ a first type of receiver for extracting at least one of said subbands, but not all subbands from the transmitted OFDM signal, and a second type of receiver for performing demodulation on all carrier frequencies of all frequency bands assigned to the OFDM signal,

extracting from the OFDM signal at least one, but not all the frequency subbands, by filtering with the first type of receiver; and

performing demodulation processing solely on the frequency carriers contained in the extracted subbands of the OFDM signal with the first type of receiver and on all carrier frequencies of all frequency bands assigned to the OFDM signal by the second type of receiver.

98. (Previously Presented) A method of forming a modulated OFDM signal from two or more independent source signals, the method comprising:

assigning a frequency band to an OFDM signal, the frequency band containing two or more frequency subbands, each frequency subband representing several approximately orthogonal carrier frequencies;

assigning each of the frequency subbands to an independent source signal such that each frequency subband is assigned a corresponding source signal;

selectively modulating the carrier frequencies of each frequency subband with coded bits from the corresponding source signal; and

grouping the modulated frequency subbands to form the modulated OFDM signal.